# MICROSOFT NEWS RELEASE

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## BACKGROUND ON SOFTWARE INDUSTRY

### INTRODUCTION

The microcomputer industry began to form in the mid 1970's. Since its inception, the industry has experienced rapid growth. Most visible have been the successes of various hardware suppliers -- Apple Computer, Tandy, Osborne Computer, and more recently IBM. But the rapid growth of the microcomputer industry has also spawned a number of other fast-moving businesses, particularly in software to support the computers.

In the industry's early days, by far the largest proportion of microcomputer revenues was obtained from hardware. Now, the proportions are shifting. According to one study, by 1981 approximately one-fourth of the industry's revenues were derived from software. By the end of this decade, software is expected to outpace hardware as a source of industry revenues.

Microcomputer software has traditionally been classified into two broad categories: systems software and applications software. Systems software includes operating systems, languages and broadly defined end-user tools (see Exhibit 1). Applications software, on the other hand, is based on systems software and is software developed to perform a specific application, such as writing payroll checks.

## THE SOFTWARE MARKET

Although developing firm estimates in these rapidly growing markets is difficult, in 1982 the total market for small computers (defined as computers selling for under $10,000) and software was estimated at about $6.7 billion. The software portion of the small computer and software market has been estimated at slightly over $1 billion.

Of the two software markets -- systems and applications software -- the systems software market is estimated to be growing slightly faster, at 30 percent annually. The applications software market is estimated to be growing at a 25 percent annual rate.

A number of factors are at work helping determine the size and growth rates of software markets. First, the rapidly accelerating adoption of small, personal, portable, and other forms of microcomputers is stimulating software markets. Exhibit 2 shows one forecast of personal computer shipments which underlines the major driving force behind the small computer software market.

A second factor stimulating the market is the relatively low cost of software packages. For example, some small and personal computer companies supply systems software for little or no user costs. As a result, virtually every machine delivered includes some form of systems software.

Second, costs of acquiring tested, reliable applications software packages for personal computers are usually far below the alternate costs of individual development. An entire accounting software series of packages can be acquired to run on a personal computer for less than $5,000. For most users, this cost is far below the alternative costs of developing his/her own custom package.

A third factor in the development of the microcomputer software industry has been the concentration on a few key systems software packages. For example, only a few operating systems account for the majority of systems sold. And the early acceptance of a few languages -- such as Microsoft's BASIC(R) -- meant the microcomputer market did not suffer the early fragmentation experienced in both the mainframe and minicomputer markets.

A fourth attribute of the microcomputer software market has been the excellent success enjoyed by independent software vendors. This success is in marked contrast to the patterns evolved in the early years of both the mainframe and minicomputer markets. In those markets, the hardware vendors attempted to maintain control and marketing influence over both hardware and software. Independent software vendors found competition difficult, especially since the hardware companies assumed responsibility for development, maintenance, and marketing of systems software.

In the microcomputer market, in contrast, the most successful operating systems have been those developed, marketed, and maintained by independent vendors. As one result of this change in emphasis, the microcomputer market appears to have developed much more rapidly.

Software Begins to Sell Hardware

While rapid acceptance of microcomputer hardware has been responsible for stimulating revenues and product development in the software industry, the reverse is also true. Software, especially standardized software, has been instrumental in making microcomputer hardware more attractive to users.

The growth of the independent software industry traces its roots to 1969, when IBM first unbundled software from hardware sales in mainframe computers. Prior to 1969, most computer users purchased the hardware, the machine's instruction set, operating systems, and even some applications software from the computer vendor.

A similar trend occurred in the minicomputer industry. Even though software was unbundled, the hardware, instruction set, and operating system offered by the vendor tended to be the one adopted by the user base. Therefore, neither the mainframe nor the minicomputer industry provided conditions to stimulate the development of an independent software industry.

The situation was different, however, with the development of the microcomputer industry. The main reason for the difference is the microprocessor.

The microprocessor, first developed by Intel Corporation in 1971, is essentially a computer-on-a-chip. But Intel is a semiconductor company, not a computer company, and sought to market microprocessors into a number of applications, of which the microcomputer was only one.

The first microprocessors used an instruction set generally modeled after those minicomputers. More importantly, the semiconductor companies provided only the instruction set to users. As a result, the need for an operating system soon became apparent, and an independent software firm -- Digital Research -- provided an operating system that became widely used in 8-bit applications.

With a few exceptions, the pattern established at the introduction of the microprocessor has continued over the past decade. Semiconductor companies provide silicon technology-based microprocessors. Independent software companies develop and market essential system and applications software that provides that "glue" through which a number of microcomputer companies can provide end-user products.

## Software Markets Begin to Converge

When 8-bit microprocessors were predominate, systems software vendors tended to fall into one of three categories:

- -- operating system suppliers, such as Digital Research, who developed the CP/M(R) operating system primarily for 8-bit microprocessor-based computers
- -- language suppliers, such as Microsoft, where the emphasis was on providing interpreters and compilers so that other software could be developed for the new kinds of microcomputers, and
- -- generic applications package suppliers, such as Personal Software (now VisiCorp)(R), who supplied first-generation generic products such as VisiCalc(R) that could be modified to meet a variety of application requirements.

Specialization within these categories was often the result of the newness of the microcomputer, and technically, the reliance on 8-bit microprocessors. The term 8-bit refers to the internal length of data that the microprocessor could process. It also refers to the ability of a microprocessor to address data and instructions in memory.

Generally, 8-bit machines were limited to very small memory, primarily because the 8-bit microprocessor could only address up to 64-kilobytes of memory. Consequently, the three classes of software suppliers concentrated on developing products that would fit within the memory constraint, and still provide good performance.

The 16-bit Microprocessor Brought Change

When the first 16-bit microprocessors became available, the substantially increased computing power and memory addressability they provided brought substantial change to the microcomputer software industry. Microprocessors could access up to one million bytes of data (one megabyte). No longer did the emphasis in systems software have be on small size. Instead, the emphasis quickly changed from size to capability and performance. With the change in emphasis came changes in industry structure.

The best example of change brought by 16-bit microprocessors is the entry into the personal computer market by IBM. In 1980, IBM began a project to build a personal computer relying, to a large degree, on outside sources. For the microprocessor, IBM went to Intel for the 8088. For operating system, IBM came first to Microsoft for a new, 16-bit operating system called PC-DOS by IBM, and MS(tm)-DOS by Microsoft. For applications software, IBM approached a number of sources, including Microsoft.

When the IBM personal computer was introduced in August, 1981, it legitimized the trend started with the first microprocessor -- the reliance on independent firms for operating systems and other software for microcomputers.

Moreover, since the IBM personal computer was among the first to offer 16-bit power and memory addressing, it opened up new avenues for the existing systems software suppliers. The 8-bit standard products would remain standards for 8-bit machines. But 16-bit systems software was an entirely new area, one in which new leaders could and did emerge.

Microsoft was one of the first software companies to recognize and act on the shift from 8 to 16-bit systems. Working with IBM, Microsoft developed a new 16-bit operating system, adopted existing 8-bit languages to 16-bit versions, and also began developing new, second-generation end-user tools (such as Multiplan(tm) worksheet), to take full advantage of the advancing microprocessor technology.

Microsoft -- A Leading Software Supplier From the Beginning

A history of Microsoft is essentially an abridged history of the microcomputer market. Bill Gates and Paul Allen attended Lakeside High School in Seattle. In their sophomore year, they founded Traf-O-Data, a company to use the power of the computer to analyze traffic for cities. Later, but while still in high school, the two were hired to build a software model of the Bonneville Power Administration's electricity grid.

After two years of college, Gates and Allen found themselves in the beginning of the microcomputer industry. They noted that a new firm, MITS, was about to introduce the world's first commercial microcomputer. This product, called the Altair, was based on Intel's first 8-bit microprocessor -- the 8080. Gates and Allen saw that the Altair would only be offered with low-level languages, such as assembly language or machine language, and they were concerned that the new machine might therefore be much more difficult to use than necessary.

As a result, within weeks they developed the first BASIC interpreter to run on the Altair, thereby opening up new markets for the early microcomputers. The BASIC interpreter was sold to MITS in 1975, and during the next year, to a number of other companies, such as General Electric, NCR,

and Citibank. Because of its performance, Microsoft BASIC quickly became established as the microcomputer industry's first high-level language. By 1983, over two million microcomputers had been equipped with Microsoft BASIC, and enhanced and upgraded versions continue to be among the company's more popular products.

For the next few years, Microsoft continued to concentrate on microcomputer languages, adding additional versions of BASIC, FORTRAN (in 1977), COBOL (in 1978), and related products.

In response to continued user demand for enhancements to these language products, and anticipating the changes that would occur with the shift to 16-bit machines, Microsoft established a consumer products division in 1979.

One year later, the company introduced its first significant non-language product: SoftCard System(tm). By 1980, the microcomputer world had divided into two camps, often based on the microprocessor at the heart of the microcomputer. One camp used Intel microprocessors, and also generally used the CP/M operating system. The other camp consisted primarily of a few systems with proprietary operating systems, typified by the Apple II.

Microsoft's SoftCard bridged the gap between the two camps. SoftCard is a small, plug-in board that fits in an expansion slot of the Apple II. Its function is to bring the CP/M operating system and associated application software packages to Apple II users. The need for SoftCard was verified by sales of over 25,000 units during the first year on the market.

At about the same time -- in 1980 -- Microsoft began to act to prepare for the changes that 16-bit microprocessors would bring to microcomputer software. First, Microsoft acquired a license for the UNIX(tm) operating system from Bell Laboratories. Second, Microsoft began to work with IBM to develop a comprehensive 16-bit software solution for the new IBM personal computer.

UNIX operating system is the term used to describe a powerful, 16-bit multi-user operating system developed at Bell Laboratories for internal software development. UNIX operating system, originally developed for operation on minicomputers, was a powerful set of tools that provided programmers a number of features and benefits. But UNIX operating system was not designed to operate in the more limited world of the 16-bit microprocessor, systems based on the microprocessor.

Microsoft adapted UNIX operating system for the new microprocessors, and in the process also added a number of enhancements. After the development and enhancement process was completed, Microsoft began to offer what was essentially a new product, XENIX(tm) operating system, based on UNIX operating system but modified to meet the needs of the microprocessor environment.

Moreover, Microsoft filled a growing need among software developers. At the time, Bell Laboratories had a relatively restricted licensing policy for UNIX operating system. In addition, Bell did not promise to support UNIX operating system users with changes, upgrades, and other required software maintenance and support functions. The need was filled by Microsoft. Microsoft provides maintenance, support, and even applications assistance to XENIX OEMs and end-users. Thus, Microsoft quickly became positioned to supply a popular but standardized, high-level 16-bit operating system that was targeted to the needs of the software programmer and developer.

The IBM personal computer offered a similar opportunity at the other end of the performance scale. IBM could have worked only with Digital Research -- supplier of the 8-bit CP/M operating system -- to develop a 16-bit version. But IBM chose, instead, to work with Microsoft to develop a new single-user operating system targeted to taking full advantage of the new 16-bit microprocessor. The resulting 16-bit operating system is known as DOS when supplied by IBM, as MS-DOS when supplied by Microsoft, and as SB-86 when supplied by Lifeboat Associates.

Other product directions resulted from Microsoft's work with IBM. For example, early language products were improved to take full advantage of the

new product's 16-bit microprocessor. More important, however, was the establishment of a new software direction: the development of end-user application tools, typified by Multiplan(tm) worksheet.

Multiplan is a second-generation "worksheet" end-user tool of the variety pioneered by VisiCalc. It is second generation in that it takes full advantage of 16-bit microprocessor attributes to be significantly easier to use. Multiplan is also integrated into MS-DOS in a manner that both the operating system and the end-user benefit from such integration. Multiplan worksheet is currently the most visible of what are likely to be Microsoft's series of end-user tools for the microcomputer.

## The Company

By 1982, Microsoft had developed into a full-line systems software supplier for the microcomputer industry. Over two million microcomputers use the company's BASIC language. Over sixty OEMs have licensed Microsoft's XENIX multi-user 16-bit operating system, and MS-DOS has a substantial portion of the 16-bit microcomputer operating system market. Although Microsoft is a privately held company and does not disclose financial results, various industry sources have estimated Microsoft's revenues in the $50 million range, and view the company as a technical and market leader in the three segments in which it competes.

## PERSONNEL

Microsoft currently operates with a complement of over 200 employees, most of whom are dedicated to software development and maintenance. The company has two distribution groups, OEM and Retail. The OEM group deals primarily with system software, while the Retail group deals with certain systems software products (such as language enhancements) sold to consumers plus the company's line of end-user tools and specific applications software products.

Key company officers include:

-- James C. Towne, President
Towne was named president in July, 1982 in a move designed to strengthen the company's management depth. Towne joined Microsoft after a career at Tektronix, where his most recent assignment was vice president and general manager of the Instruments Division. Towne's responsibilities include worldwide operations, product development, marketing, OEM sales, and administration.

-- William H. Gates, Chairman and Executive Vice President
Gates, along with Paul Allen, was a founder of Microsoft. Over the years, Gates' responsibilities have included a number of aspects of the company's operations. In 1982, he began to concentrate on technical development, including product design, the internal development process, outside software licensing, and documentation.

-- Paul G. Allen, Executive Vice President
Allen, with Bill Gates, is a Microsoft founder. Over the early years when the company was developing, Allen was involved in a number of areas, from product development through marketing. In 1982, Allen accepted responsibility for Microsoft's on-going research and development activity, in order to assure that a continual flow of new products will be available to meet the needs of microcomputer users.

-- Kazuhiko Nishi, Vice President, New Technologies
"Kay" Nishi became associated with Microsoft through publishing Japan's ASCII magazine. He then began to represent Microsoft in the growing Japanese market, where he has been instrumental in Microsoft's successful market position. Nishi is responsible for forecasting technology trends and their impact on the microcomputer software market.

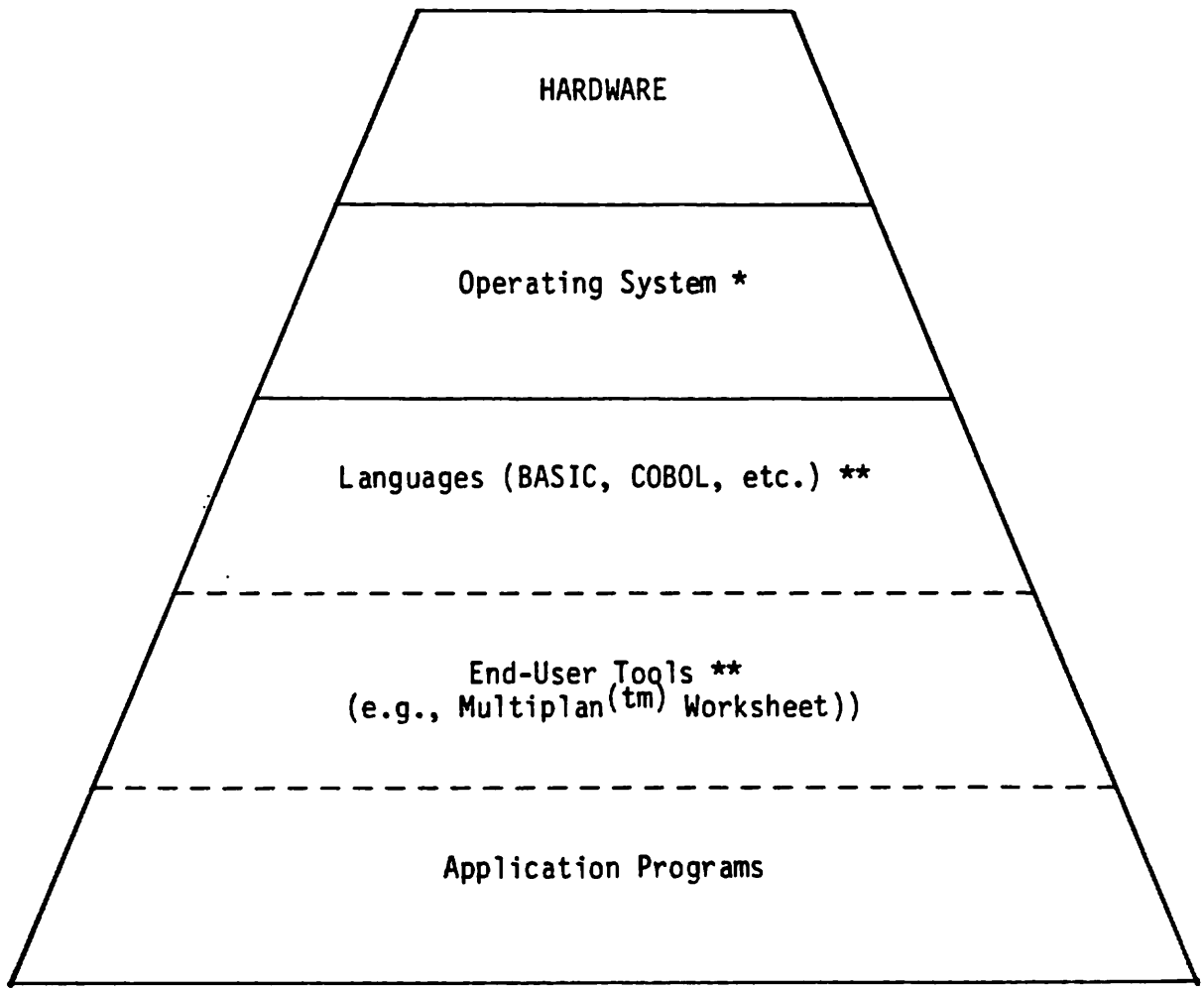
## FACILITIES

Microsoft's home office is in Bellevue, Washington. In addition, the company has offices in the United Kingdom and Japan, and plans are underway for additional offices in Europe.

Microsoft's facilities feature innovative uses of computers. For example, the company has implemented an electronic mail system within the Bellevue office so that virtually all paper communication has been eliminated. Even telephone messages are integrated into the electronic mail system.

For software development widespread use of terminals is found in the Bellevue facilities. Each is hooked into a central computer, so that each programmer has access to the power and capability required for program development. As might be expected, Microsoft's multiuser XENIX operating system is used internally.

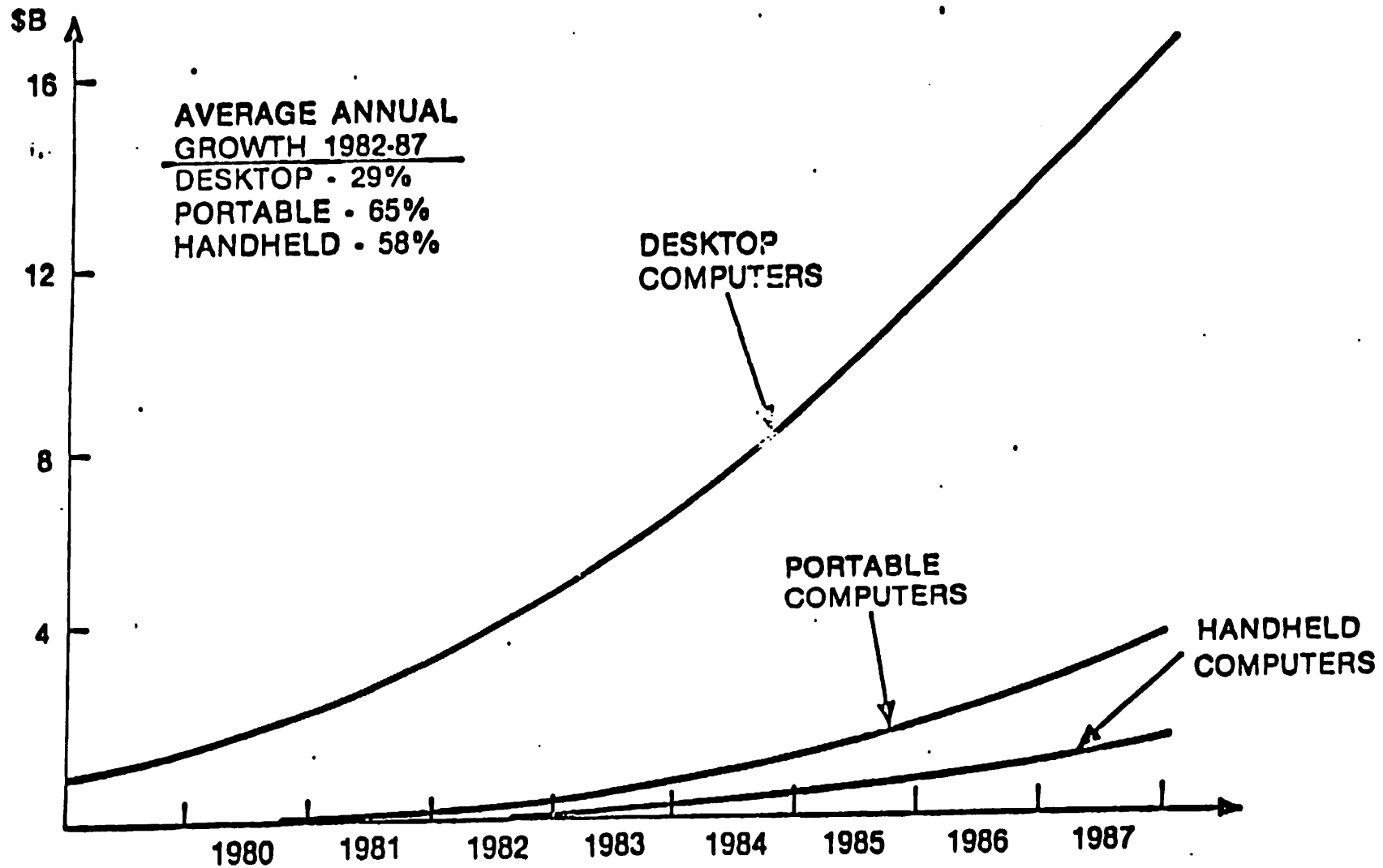
EXHIBIT 1




* must adapt to new hardware
** If adapted to operating system, these don't change

Exhibit 2

# WORLDWIDE PERSONAL COMPUTER MARKETS

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The personal computer market is becoming a multi-billion dollar business. The desktop segment will remain the largest portion. The desktop data agrees with the $1K, $3K and $10K system forecast in the June 1981 FCI issue. The portable computer market grows from $120M in 1981 to $3.5B in 1987. The handheld computer market grows from $60M in 1981 to $1.3B in 1987.